

SOV/126-7-1-13/28

X-Ray Investigation of the Structure of Rubbing Surfaces

1.5 m/sec. Fig.4 is a photomicrograph of the cross-section of surface layers of the specimen, tested in an atmosphere of air at a slip rate of 1.5 m/sec. Fig.5 is a photomicrograph of the wear surface of the specimen, which had been tested in an atmosphere of air at a slip rate of 6 m/sec. Fig.6 is a photomicrograph of the cross-section of the surface layers of the specimen which had been tested in an atmosphere of air at a slip rate of 6 m/sec. Fig.7 is a photomicrograph of the wear surface of the specimen which had been tested in an atmosphere of oxygen at a slip rate of 1.5 m/sec. Fig.8 is a photomicrograph of the cross-section of the surface layers of the specimen which had been tested in an atmosphere of oxygen at a slip rate of 1.5 m/sec. As a result of experiments, the authors have arrived at the following conclusions:

(1) Under various conditions of rubbing thin surface layers of iron and steel undergo a fundamental change in structure and composition, the nature of which is determined by the plastic deformation processes, heat evolutions during rubbing and chemical reactions between the metal and the surrounding medium.

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(2) Investigations of the structure of the surface layers of steel and iron have confirmed the conclusions, arrived at by the authors in their work on the classification of the aspects of wear, as to the occurrence of oxidizing and thermal wear of metal.

(3) An X-ray structural analysis of the rubbing surfaces of iron and steel has shown that in the first type of wear hardening no thermal and chemical reactions occur on the rubbing surfaces. The main process, determining this aspect of wear, is the plastic deformation of the metal, as well as the formation and destruction of metallic bonds. In oxidizing wear, the main factors are the chemical processes of the interaction between metal and oxygen from the air. In all series of experiments on the oxidizing wear, lattices of the chemical compounds  $\text{FeO}$ ,  $\text{Fe}_3\text{O}_4$  and  $\alpha\text{-Fe}_2\text{O}_3$  were observed. In thermal wear the main factors are thermal processes taking place as the result of heat evolved due to rubbing. In this aspect of wear, lattices and structures of austenite and

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X-Ray Investigation of the Structure of Rubbing Surfaces

austenite-martensite are observed in the rubbing surfaces  
of steel specimens.

There are 8 figures, 1 table and 10 Soviet references.

ASSOCIATION: Kiyevskiy institut grazhdanskogo vozdushnogo flota  
(Kiev Institute of the Civil Air Fleet)

SUBMITTED: April 11, 1957

Card 6/6

SOV/126-7-6-15/24

AUTHORS: Kostetskiy, B. I. and Trotsik, O. I.

TITLE: Investigation of the Structure of Iron and Steel During High-Temperature Oxidation in an Atmosphere of Air

PERIODICAL: Fizika metallov i metallovedeniye, 1959, Vol 7, Nr 6, pp 899-902 (USSR)

ABSTRACT: The object of this work was to compare data on the properties of oxide phases formed in scaling of iron and steel with corresponding data for phases found in the surface layers of iron in oxidizing friction. Fig 1 shows the structure of friction-oxidized St.45 steel with two oxide phases over the metal. Specimens of armco iron and type St.45 steel were oxidized at 650-800°C for 2 hours, this being followed by air or water cooling. The structures for oxidized armco iron are shown in Figs 2-5 (etching with 4% nitric acid in alcohol). The 100-300 micron-thick scale generally consisted of a thin (5-45  $\mu$ ) outer layer of ferric oxide, a 30-120  $\mu$  thick layer of magnetic oxide and an inner (70-150  $\mu$ ) layer of ferrous oxide. The respective hardness values (50 g load) were 1145, 645, 550-645 kg/mm<sup>2</sup>, that of the base metal being Card 1/2140 kg/mm<sup>2</sup>. Grains in the outer layers of the metal were

KOSTETSKIY, I. L.

PHASE I BOOK EXPLOITATION

SOV/5053

Vsesoyuznaya konferentsiya po treniyu i iznosu v mashinakh. 3d, 1958.

Iznos i iznosostoykost'. Antifriktsionnyye materialy (Wear and Wear Resistance. Antifriction Materials) Moscow, Izd-vo AN SSSR, 1960. 273 p. Errata slip inserted. 3,500 copies printed. (Series: Its: Trudy, v. 1)

Sponsoring Agency: Akademiya nauk SSSR. Institut mashinovedeniya. Resp. Ed.: M. M. Khrushchov, Professor; Eds. of Publishing House: M. Ya. Klebanov, and S. L. Orpik; Tech. Ed.: T. V. Polyakova.

PURPOSE: This collection of articles is intended for practicing engineers and research scientists.

COVERAGE: The collection, published by the Institut mashinovedeniya, AN SSSR (Institute of Science of Machines, Academy of Sciences USSR) contains papers presented at the III Vsesoyuznaya Konferentsiya po treniyu i iznosu v mashinakh (Third All-Union

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Wear and Wear Resistance (Cont.)

SOV/5053

Conference on Friction and Wear in Machines) which was held April 9-15, 1958. Problems discussed were in 5 main areas: 1) Hydrodynamic Theory of Lubrication and Friction Bearings (Chairmen: Ye. M. Gut'yar, Doctor of Technical Sciences, and A. K. D'yachkov, Doctor of Technical Sciences); 2) Lubrication and Lubricant Materials (Chairman: G. V. Vinogradov, Doctor of Chemical Sciences); 3) Dry and Boundary Friction (Chairmen: B. V. Deryagin, Corresponding Member of the Academy of Sciences USSR, and I. V. Kragel'skiy, Doctor of Technical Sciences); 4) Wear and Wear Resistance (Chairman: M. M. Krushchov, Doctor of Technical Sciences); and 5) Friction and Antifriction Materials (Chairmen: I. V. Kragel'skiy, Doctor of Technical Sciences, and M. M. Krushchov, Doctor of Technical Sciences). Chairman of the general assembly (on the first and last day of the conference) was Academician A. A. Blagonravov. L. Yu. Pruzhanskiy, Candidate of Technical Sciences, was scientific secretary. The transactions of the conference were published in 3 volumes, of which the present volume is the first. This volume contains articles concerning the wear and

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Wear and Wear Resistance (Cont.)

SOV/5053

wear resistance of antifriction materials. Among the topics covered are: modern developments in the theory and experimental science of wear resistance of materials, specific data on the wear resistance of various combinations of materials, methods for increasing the wear resistance of certain materials, the effects of friction and wear on the structure of materials, the mechanism of the seizing of metals, the effect of various types of lubricating materials on seizing, abrasive wear of a wide variety of materials and components under many different conditions, modern developments in antifriction materials, and the effects of finish machining on wear resistance. Many personalities are mentioned in the text. References accompany most of the articles.

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PHASE I BOOK EXPLOITATION

SOV/3953

Kostetskiy, Boris Ivanovich

Soprotivleniye iznashivaniyu detaley mashin (Wear Resistance of Machine Parts)  
Moscow, Mashgiz, 1959. 478 p. 7,000 copies printed.

Reviewer: G. A. Preys, Candidate of Technical Sciences; Eds.: N. L. Golego,  
Candidate of Technical Sciences, and G. D. Tynyaniy; Chief Ed.: (Southern  
Division, Mashgiz): V. K. Serdyuk, Engineer.

PURPOSE: This book is intended for engineer designers, process engineers and  
workers of scientific research institutes and laboratories.

COVERAGE: This book contains the basic assumptions of the theory of wear of  
machine parts. The processes of friction and wear of metals are viewed  
from the standpoint of the most recent development in physical metallurgy,  
physics of solids, and surface chemistry. Presented are new data concerned  
with methods of investigation, physical nature, and basic regularity pat-  
terns of the processes of friction and wear of machine parts.

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S/686/61/000/000/005/012  
D207/D303

26.21P2

AUTHORS: Kostetskiy, B. I. and Pustovarova, N. P.

TITLE: Plastic deformation and secondary phenomena at contacts of rubbing metals

SOURCE: Soveshchabiye po voprosam teorii sukhogo treniya i obrazovaniya chastits iznosa pri sukhom trenii. Riga, 1959, 81-96

TEXT: The authors studied the effect of plastic deformation during dry or lubricated friction on diffusion and chemical reactions in metal surfaces. The purpose of the study was to obtain information on processes occurring in friction of machine parts. For work on the plastic deformation itself the authors refer to investigations of groups of Soviet scientists working under P. A. Re-  
binder, V. D. Kusnetsov, K. V. Savitskiy and S. B. Aynbinder. Optical and electron microscopes were employed, X-ray diffraction and spectral analyses were carried out, microhardness was measured, and radioactive tracers were used to study diffusion. Tests were

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D207/D303

Plastic deformation and ...

carried out at sliding rates of 0.005-9 m/sec under normal loads of 10 - 55 kg/cm<sup>2</sup> in air, argon, oxygen, oil, water, dilute sulphuric, nitric and hydrochloric acids, and in alcohol. The main work was carried out on Armco iron; some tests were made on the formation of brass by diffusion between zinc and copper plates in contact. Rates of diffusion and of chemical reactions were found to rise sharply on plastic deformation due to formation of crystal defects. Metal surfaces became saturated with oxygen from air and with carbon from lubricants. "White" surface layers which could not be etched away were formed. Below these layers there were strongly deformed regions which were very easy to etch. Plastic deformation intensified formation of brass between zinc and copper, aided formation of pearlite in Armco iron due to diffusion of carbon from lubricants, and increased penetration of S<sup>35</sup> into Armco iron. The results were used to develop mechano-chemical methods of cementation of iron and steel in liquids and hardening of iron and steel surfaces using saturation with oxygen in liquids. [Abstractor's note: These treatments are not described.] There are 10

Card 2/3

S/i37/61/000/007/067/072

AO6G/A101

AUTHORS: Kostetskiy, B. I.; Nosovskiy, I. G.; Golego, N. L.; Topekha, P.K.

TITLE: Classification of metals and alloys according to their wear resistance

PERIODICAL: Referativnyy zhurnal Metallurgiya, no. 7, 1961, 35, abstract 7Zh256 ("Tr. 3-y Vses. konferentsii po treniyu i iznosu v mashinakh. T.I.", Moscow, AN SSSR, 1960, 15-27)

TEXT: In order to devise a classification of metals according to characteristics of their oxidability and seizability, a series of tests have been carried out on a friction machine KE-2 which makes it possible to conduct tests in different gaseous media. Specimens of Fe, steel 45, Бр. АМц (Br. AMts), Бр. АЗМц (Br. AZhMts), Al, Sn, Б-83 (B-83), Pb, Бр.О-14 (Br.O-14), Бр.С-30 (Br.S-30), Bi, Sb, Cd, Ni, Zn, Mg, and Co were tested under dry friction in air, O<sub>2</sub>, and argon and subsequently studied by metallography. The friction of specimens was carried out against a rotating disk from steel 45 at a displacement velocity of the friction surfaces of 6 m/sec and a specific pressure of 7.5 kg/cm<sup>2</sup>. During the test the friction force and the temperature were measured at a distance of 1 mm

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S/137/61/000/007/067/072  
A060/A101

Classification of metals and alloys ...

from the friction surface, and the reduced wear of the specimens by weight and volume was determined. Under the metallographic analysis the friction surface was studied and the microhardness determined. A scheme for classifying materials according to their wear-resistance under friction and taking into account their seizability and oxidability is worked out, according to which all metals and alloys are divided into 4 groups. The first group includes Fe, Cu, and some of their alloys, and also Al which, although it shows a seizability of both kind I and kind II, under conditions of oxidizing friction forms protective oxide films which show good wear resistance due to a stable bond to the base metal and possess a high hardness. The second group includes metals and alloys not prone to seizing and which form protective oxide films with high wear resistance under oxidizing friction. Sn and its alloys and a whole series of antifriction metals and alloys belong to this group. The third group includes metals (Sb, Bi, Cd) which do not demonstrate seizability and under oxidizing friction form very fragile oxide films, which raise sharply the wear rate. The fourth group includes metals (Zn, Mg) which possess seizability and under conditions of oxidizing friction form easily disintegrating oxide films which also increase the wear rate.

L. Gordiyenko

[Abstracter's note: Complete translation]

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GOLEGO, Nikolay Lukich; PREYS, G.A., kand. tekhn. nauk, retsenzent; KO-  
STETSKIY, B.I., doktor tekhn. nauk, prof., red.; CHISTYAKOVA, L.G.,  
inzh., red.; GORNOSTAYPOL'SKAYA, M.S., tekhn. red.

[Technological measures for preventing wear of machinery] Tekhnolo-  
gicheskie meropriyatia po bor'be s iznosom v mashinakh. Moskva,  
Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1961. 191 p.  
(MIRA 14:9)

(Mechanical wear)

S/123/62/000/013/014/021  
A004/A101

AUTHORS: Kostetskiy, B. I., Kucheryavyy, O. I., Kuyun, A. I.

TITLE: Structure and properties of the surface in steel grinding

PERIODICAL: Referativnyy zhurnal, Mashinostroyeniye, no. 13, 1962, 99, abstract  
13B620 (In collection: "Kachestvo poverkhnosti detaley mashin.  
v. 5", Mosqow, AS USSR, 1961, 283 - 291)

TEXT: The authors present the results of measuring the temperature developing in surface grinding. Specimens from heat-treated Y 8 (U8) grade steel were tested. Grinding was carried out with a 3E 46CM2K (EB46SM2K) wheel at a speed of 23 m/sec; the depth of cut amounted to 0.1 - 0.12 mm per pass and the workpiece speed was 47 m/min. The temperature was determined with a steel - Copel thermocouple, representing a combination of the test specimen, a Copel wire 0.5 mm in diameter led into a hole of the specimen, and a layer of electrically deposited chromium. It was found that the grinding temperature at a point located 20 - 30  $\mu$  from the surface reaches 870°C. An investigation of the changes in the structure and microhardness of the surface layer showed that a white

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3/14/61/000/00/011/014  
1001/1207

AUTHORS: Kostetskiy, S.I., Kucheryavyy, and Kuyun, A.I.

TITLE: Surface structure and properties during grinding steel parts

SOURCE: Akademiya Nauk SSSR. Komissiya po tekhnologii mashinostroyeniya. Seminar po kachestvu poverkhnosti. Trudy, no.5. 1961. Kachestvo poverkhnosti detaley mashin; metody i pribory, upochmeniya metallov, tekhnologiya mashinostroyeniya, 2/-31

TEXT: In order to devise suitable methods and equipment for detection and elimination of surface defects resulting from structural deformation during the grinding process, a series of studies and investigations were carried out by optical, electron microscope, x-ray and metallographical methods, the results of which are reported and their causes analyzed. As was found, structural and phase changes in the surface layers of components are caused by the heat, released during grinding while residual stresses and cracks are the result of volume changes under the action of structural transformations. One of the authors, A.I. Kuyun devised a special method for temperature measurements during grinding, the results of which are reported. The first

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3/5/4/61/000/005/011/014  
10J/1207

Surface structure and properties...

and principal factor leading to dangerous structural changes in ground surfaces is the development of friction processes during grinding, markedly increasing heat release. These undesired effects of grinding can be eliminated by: a). a suitable choice of the grinding wheel and its proper truing and dressing; b). by selecting appropriate grinding conditions, and c). by using suitable cutting fluids (coolants). Of great importance for improvement of surface conditions and elimination of harmful structural changes, is a suitable chemical and heat treatment prior to grinding. There are 7 figures.

Card 2/2

KOSTETSKIY, B.I., doktor tekhn.nauk, prof.; FILIPCHUK, I.K.

Oxidizing wear of surfaces due to rolling friction. Vest.mashinostr.  
42 no.6:29-31 Je '62. (MIRA 15:6)

(Mechanical wear)



S/883/62/000/000/020/020  
E194/E155

AUTHORS: Kostetskiy, B.I., Golego, N.L., and Bogomolov, N.I.  
TITLE: A procedure, an instrument and equipment for studies of the strength of surface layers  
SOURCE: Metody ispytaniya na iznashivaniye; trudy soveshchaniya, sostoyavshegosya 7-10 dek. 1960. Ed. by M.M. Khrushchov. Moscow, Izd-vo AN SSSR, 1962. 212-219  
TEXT: In order to develop the theory of surface strength and to solve fundamental problems of friction and wear, quantitative data are required about deformation of surface layers of solids in contact with one another. Direct methods of determining these mechanical properties in the presence of normal and tangential stresses have not yet been developed, but various indirect procedures exist. An instrument is described for studying the strength and deformation of surface layers of metal in motionless contact. A ring specimen, 39 mm o.d., 33 mm i.d., 10 mm high, with its upper edge serrated, is pressed by a hardened punch against a hardened block. Strain is measured by a pneumometric head. This is a very sensitive arrangement and a strain of a few  
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A procedure, an instrument and ...

S/883/62/000/000/020/020  
E194/E155

tenths of a micron can be measured. Strain of the specimen and the contact area can be determined as function of load. The construction is described with diagrams. Equipment is described for studying the mechanical properties of surfaces sliding at low speeds whilst subject to normal and tangential forces. Such sliding can cause strain of the surface layers, work-hardening or surface damage. These effects depend on the size and nature of the applied forces, and a machine was required with a constant area of contact with a wide range of load. The upper rotating specimen is a thick disc, whilst the lower stationary specimen is a similar disc with surface serrations; the contact area between the specimens can range from 0.5 to 5 cm<sup>2</sup>. Load can be applied up to a value which causes flow of the surface layers of the test pieces. At the start of test the normal load is zero for a given value and is raised to a preset programme. The increase in load corresponds to the linear displacement of the friction surfaces. The normal loading is recorded by an oscillograph and strain gauges. An important part of the machine is the mechanism for measuring tangential forces in friction. A flat spring

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KOSTETSKIY, B.I.; IVZHENKO, I.P.; NATANSON, M.E.

Methods of studying the profile of sparking spots formed in the spectral analysis of the friction surfaces of machine parts, Zav. lab. 28 no.9:1081-1083 '62. (MIRA 16:6)

1. Kiyevskiy institut Grashdanskogo vovdushnogo flota.  
(Spectrum analysis)  
(Materials—Testing)

KOSTETSKIY, B. I., doktor tekhn. nauk, prof.; GERMANCHUK, F. K., inzh.

Analyzing the use of friction materials in braking devices.  
Vest. mashinostr. 42 no.10:3-7 0 '62. (MIRA 15:10)

(Brakes)

ACCESSION NR: AP4029205

S/0226/64/000/002/0040/0045

AUTHOR: Kostetskiy, B. I.; Belitskiy, M. Ye.; Natanson, M. E.

TITLE: Determination of carbon and silicon in nickel-based metal-powder sealing materials using spectral analysis

SOURCE: Poroshkovaya metallurgiya, no. 2, 1964, 40-45

TOPIC TAGS: powder metallurgy, nickel, silicon, graphite, nickel base material, silicon containing material, graphite containing material, carbon, spectral analysis

ABSTRACT: The purpose of this paper is to study the necessity of conducting layer-by-layer spectrum analysis in order to show the changes to which the chemical composition of surface layers and alloys are subjected under certain conditions. The analysis was conducted at a gap width of 0.005 mm in a standard 3-lens condensor system. Exposure time was 40 sec. The following analytic pairs of lines were chosen for analysis: C I 2478.57 Å-Ni II 2473.15 Å; Si I 2881.58 Å-NiII 2864.15 Å. The distribution of the silicon and carbon content in the sealing material was plotted. The spectral analysis made it possible to select

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ACCESSION NR: AP4029205

materials that were more stable in chemical composition and durability. In conclusion, the authors claim that existing materials for seals should be more rationally used by taking into account the changes to which they are subjected during their exploitation. Orig. art. has: 5 figures and 1 table.

ASSOCIATION: Kiyevskiy institut grazhdanskogo vozdushnogo flota (Kiev Institute of Civil Aviation)

SUBMITTED: 07Jun63

ATD PRESS: 3081

ENCL: 00

SUB CODE: MM, OP

NO REF SOV: 005

OTHER: 000

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L 7005-65 EWT(m)/EWP(q)/EWP(b) ASD(m)-3/ASD(f)/AFMDC MJW/JD/WB/  
JXT(ez)

ACCESSION NR: AP4042791

S/0020/64/157/003/0574/0576

AUTHOR: Kostetskiy, B. I.; Kolesnichenko, L. F.

TITLE: Change in the steel dislocation structure resulting from deformation in the presence of surface-active substances B

SOURCE: AN SSSR. Doklady\*, v. 157, no. 3, 1964, 574-576, and insert facing p. 574

TOPIC TAGS: stainless steel, 1Kh18N9T <sup>4</sup>stainless steel, <sup>6</sup>steel dislocation structure, deformation induced dislocation structure, surface active substance, dislocation density, dislocation structure

ABSTRACT: The change in steel dislocation structure induced by deformation in air or in the presence of surface-active substances has been studied. The 1Kh18N9T <sup>4</sup>stainless-steel specimens, reduced by rolling to a thickness of 0.08—0.06 mm, were vacuum annealed at 1100 C, furnace cooled, stretched by 1—12% either in air or in vacuum <sup>6</sup>oil containing 0.2% oleic acid, and electrolytically milled to foils 1000—1500 Å thick. Examination with an electron microscope B

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*\*Designation should be TRK INTI.*

L 7005-65

ACCESSION NR: AP4042791

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revealed almost no dislocations in the as-annealed specimens. Isolated dislocations were observed within the grains of steel stretched 1% in air. The number and density of dislocations are substantially greater in specimens stretched 1% in the presence of a surface-active medium. Stretching by 2% in air creates new and more uniformly distributed dislocations and dislocation arrays at grain and block boundaries. The same deformation in a surface-active medium forms a dense and rather uniform network of dislocations. The 16% deformation in an active medium presents a very complex dislocation picture in which individual dislocations can hardly be distinguished. As a rule the change in the dislocation structure of steel deformed in the presence of a surface-active substance is much more pronounced than in steel deformed in air. Orig. art. has: 1 figure and 1 table.

ASSOCIATION: Kiyevskiy institut grazhdanskogo vozdushnogo flota  
(Kiev Institute of the Civil Air Fleet)

SUBMITTED: 26Feb64

ATD PRESS: 3103

ENCL: 00

SUB CODE: MM, SS

NO REF SOV: 007

OTHER: 007

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ACCESSION NR: AP4043545

S/0020/64/157/004/0845/0848

AUTHORS: Kostetskiy, B. I.; Kolesnichenko, L. F.

TITLE: Effect of surface-active medium on the change of the crystalline fine structure of iron hardened by plastic deformation

SOURCE: AN SSSR. Doklady\*, v. 157, no. 4, 1964, 845-848

TOPIC TAGS: surface active substance, fine structure, iron, metal-working, plastic deformation, strain hardening

ABSTRACT: The authors studied by methods of x-ray structural analysis the variation of the fine crystalline structure of technically pure iron hardened in an inactive and in surface-active media. The inactive medium used was pure non-polar mineral oil. In individual cases the change of the structure was investigated directly in air at room temperature. The absorption-active medium was pure mineral oil with 0.2% oleinic acid added. The strengthening produced by

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ACCESSION NR: AP4043545

various types of plastic deformation was estimated by measuring the microhardness. The method of preparing the samples and taking the x-ray pictures is briefly described. The results have shown that in cold plastic deformation the individual characteristics of the fine structure and the hardness experience considerable changes in different media. The most intense strengthening in inactive media occurred at relatively small degrees of deformation (20--30%). The experiments show that at relatively small degrees of deformation, an intense fractionalization of the blocks takes place in different media. The rate of block reduction in an active medium is always higher than in an inactive medium. The smallest blocks are obtained at a deformation of 30% by rolling in an active medium, and further increase in the degree of deformation does not produce further reduction in the block size. In the region of high degrees of plastic deformation (~60%), introduction of the active medium reduces the hardness and increases the block dimensions. The net result of the study is that the change in the block structure following intro-

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ACCESSION NR: AP4043545

duction of surface-active media is manifest in a greater crumbling of the blocks during the deformation. The lattice distortions are not sensitive to the surface active media. The previously observed correspondence between the hardness and the block dimensions remains the same when surface active substances are introduced, no matter what the degree of deformation. "The authors are grateful to Academician P. A. Rebinder for valuable advice and for participating in the discussion of the results." This report was presented by P. A. Rebinder. Orig. art. has: 2 figures and 1 table.

ASSOCIATION: Kiyevskiy institut grazhdanskogo vozdushnogo flota  
(Kiev Institute of Civilian Air Fleet)

SUBMITTED: 26Feb64

ENCL: 02

SUB CODE: SS, MM

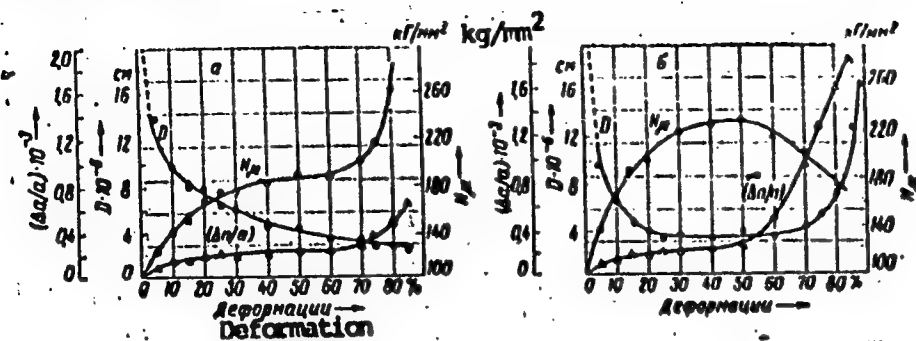
NR REF SOV: 013

OTHER: 000

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ACCESSION NR: AP4043545

ENCLOSURE 01

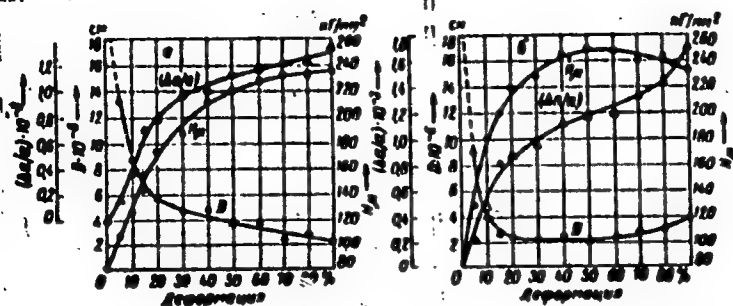


Change in characteristics of crystalline fine structure as a function of the degree of plastic deformation by compression in inactive (a) and active (b) media

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ACCESSION NR: AP4043545

ENCLOSURE: 02



Change in characteristics of fine crystalline structure as function of degree of plastic deformation by rolling on rotating rollers in air (a) and in pure vaseline oil with 0.2% oleic acid added (b)

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KOSTETSKIY, B.I. [Kostets'kyi, B.I.]; Zaporozhets, V.V. [Zaporozhets', V.V.]

Use of slow translocations in studying the regularities of external friction. Dop. AN URSR no. 12:1582-1584 '64. (MIRA 18:1)

1. Institut Grazhdanskogo vozdušnogo flota. Predstavleno akademikom AN UkrSSR K.K.Khrenovym [Khrienov, K.K.].

KOSTETSKIY, B.I., doktor tekhn. nauk, prof.; YEDIGARYAN, F.S., inzh.

Wear of antifriction bearings in gas media of various activity.  
Vest. mashinostr. 44 no.8:17-18 Ag '64.

(MIRA 17:9)

L 31349-65 EWT(m)/ENP(w)/EPF(c)/EWA(d)/EPR/I/ENP(t)/EPA(bb)-2/ENP(b) Pr-4/Fs-4

ACCESSION NR: AP4044380 JD/WB/DJ S/0122/64/000/008/0017/0018 33  
P

AUTHOR: Kostetskiy, B. I. (Doctor of technical sciences, Professor);  
Yedigaryan, F. S. (Engineer)

TITLE: Wear of ball bearings in gaseous media of various activity

1417  
SOURCE: Vestnik mashinostroyeniya, no. 8, 1964, 17-18

TOPIC TAGS: ball bearing, ball bearing wear, ball bearing oxidation  
wear, gaseous medium effect

The effect of various gas media on the wear of ball bearings has been investigated. Standard radial-thrust ball bearings with graphite separators were run without a lubricant at 1440 rpm under an axial load of 20 kg. The tests made in air, argon, carbon dioxide, and nitric-acid vapor at 40-60°C showed that the metal surface oxidation and subsequent separation of brittle oxidized particles are the main causes of the gradual failure of the friction surfaces. The weight loss in the bearing races in air was 38 mg.

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ACCESSION NR: AP4044380

compared with losses of 4.0 and 3.6 mg in carbon dioxide and argon, respectively. The corresponding figures for the friction moment were 0.19--0.2, 0.22--0.28, and 0.22--0.27 kg cm. In nitric-acid vapor the weight loss was 82.0 mg, i.e., 20 times as great as that in a neutral medium. Holding in an aggressive medium for a few hours before testing significantly increased the weight loss. Reducing the oxygen content in the friction zone is one of the most effective means of decreasing the oxidation wear of ball bearings. Separators made of graphite and other polymers should be used in neutral gaseous media. Doc. art. has: 2 figures and 1 table.

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: IE

NO REF SOV: 005

OTHER: 000

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KOSTETSKIY, B.I.; IVZHENKO, I.P.

Dislocation model of processes of the cold welding of metals.  
Avtom. svar. 17 no.5:18-20 My '64. (MIRA 17:11)

1. Kiyevskiy Institut Grazhdanskogo vozduhnogo flota.

KOSTETSKIY, B.I., prof.; YEDIGARYAN, F.S., inzh.; NATANSON, M.E., inzh.

Changes in chemical composition of very fine layers of friction surfaces  
of antifriction bearings during their operation. Izv.vys.ucheb.zav.;  
mashinostr. no.5:52-54 '64. (MIRA 18:1)

1. Kiyevskiy institut Grazhdanskogo vozdushnogo flota.

KOSTETSKIY, B.I.; NAZARENKO, P.V.

Relation between the external friction force and normal pressure  
in connection with changes in dislocation structure (Amonton-  
Coulomb law). Dokl. AN SSSR 159 no.1:66-67 N '64.

(MIRA 17:12)

1. Kiyevskiy institut Grazhdanskogo vozdushnogo flota.  
Predstavleno akademikom A.A. Blagonravovym.

L 40904-65 EMT(m)/EPF(c)/EMP(w)/ENA(d)/I/EMP(t)/EMP(b) JD/DJ  
ACCESSION NR: AP5069279 S/0369/65/001/001/0032/0039

AUTHOR: Kogtetskiy, B.I.; Kolesnichenko, L.F.; Ostrovoy, Yu. D.; Natanson, M.; Skarchenkov, K. Z.; Topekha, P.K. 32

TITLE: Additives to lubricating oils and their action during friction

SOURCE: Fiziko-khimicheskaya mekhanika materialov, v. 1, no. 1, 1965, 32-39

TOPIC TAGS: lubricating oil, oil additive, metal friction, surfactant additive, contact friction, metal thiocyanate, metal dithizonate, friction couple

ABSTRACT: After discussing the mechanisms by which a lubricant operates in contact friction between metals and pointing out the desirable effects of additives, the authors review the reported data on surface-active additives and chemically active additives to lubricants. The changes brought about by surface-active additives in the contact surface of the metal under conditions of friction are considered (changes in plastic deformation and resultant hardening, changes in the density of dislocations and in the intragranular structure). In the case of chemically active additives, the desirable effects of such compounds are thought to be due to their decomposition under the influence of the high temperature produced by the friction. Investigations of metal complexes of the type of thiocyanates and dithizonates are reviewed, and their effects are illustrated by the example of an armco -  
Card 1/2

L 40905-65 EWT(m)/EPF(c)/T/EMP(t)/EMP(b)/EMA(c) Pr-4 JD/DJ  
ACCESSION NR: AP5009285 S/0369/65/001/001/0073/0077

AUTHOR: Kostotskiy, B.I.; Nazarenko, P.V.

TITLE: Study of the dislocation structure during static and kinetic friction

SOURCE: Fiziko-khimicheskaya mekhanika materialov, v. 1, no. 1, 1965, 73-77

TOPIC TAGS: dislocation structure, static friction, kinetic friction, alkali halide crystal, zinc crystal, crystal structure, metal diffusion

ABSTRACT: The authors studied the static and dynamic frictional force in the alkali halide crystals NaCl, KCl, KBr, KI and LiF, and in zinc crystals. Friction was achieved with a machine which made it possible to change the normal load and slip rate over a wide range. The experiments confirmed the known fact that the static frictional force is greater than the dynamic frictional force. Using the theory of dislocations to explain this phenomenon, the authors discuss the following causes of the increase in the static frictional force: (1) Characteristics of the arrangement of dislocations during the action of the normal force alone and during the combined action of the normal and tangential forces; (2) Difference in the stress fields around the stationary and moving dislocation; (3) Interaction between the dislocations and impurities; (4) Diffusion phenomena in the contact zone.

Card 1/2

L 40905-65

ACCESSION NR: AP5009285

All four causes are related to the fine internal structure of the crystalline bodies. Orig.  
art. has: 4 figures.

ASSOCIATION: KIGA, Kiev

SUBMITTED: 15Sep64

ENCL: 00

SUB CODE: IC, SS

NO REF SOV: 006

OTHER: 001

*llc*  
Card 2/2

KOSTETSKIY, B.I.; NAZARENKO, P.V.

Surface interaction between crystalline bodies in friction.  
Dokl. AN SSSR 160 no.1:88-90 Ja '65.

(MIRA 18:2)

1. Kiyevskiy Institut Grazhdanskogo vozdušnogo flota. Submitted April 20, 1964.

AUTHORS: Belikov, I., Kostetskiy, E.

20-119-6-51/56

TITLE: The Distribution of Photosynthetic Products in the Soya-Bean Plant During the Early Stages of Its Development (Rasprede-  
leniye produktov fotosinteza u soi v ranniye fazy yeye raz-  
vitiya)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol. 119, Nr 6,  
pp. 1236 - 1239 (USSR)

ABSTRACT: The first author stated earlier that in the soya-bean the  
photosynthetic products are transported from the grown up  
leaves into the young growing leaves, into the growing point  
of the sprouts, into the stalks and the roots. However, from  
the leaves of the lowest stage C<sup>14</sup> either did not at all reach  
the young leaves, or only in small quantities. After initial  
doubts the assumption was made that leaves of different height  
possess an own domain of supply with "assimilates" (Reference  
3). In the Botanical Garden of the Far East Branch of the  
AS USSR 4 species of soya-beans were sown and 2 test series  
were performed on them : I) With additional food with C<sup>14</sup>O<sub>2</sub>  
in the 4 grown up leaves and one young leaf. II) With 7 grown

Card 1/3

APPROVED FOR RELEASE: 06/14/2000

CIA-RDP86-00513R000825210018-

The Distribution of Photosynthetic Products in the  
Soya-Bean Plant During the Early Stages of Its Development

up and an eighth growing with a small assimilation surface.  
The test results (tables 1-4) permit to draw the following  
conclusions: In the soya-bean a tendency of local distribution  
of photosynthetic products does not only exist during the  
formation of legume, but also during earlier stages. During  
this time the "assimilates" mainly come from the leaves of  
the lower stage into the lower part of the plant: roots and  
branches, which are in the axil of the paired leaves and in  
the axil of the first triad leaf. From the leaves of the upper  
stage they mainly come to the young growing leaves and to the  
growing point of the upper stalk part; from the leaves of the  
middle stage the photosynthetic products are directed to the  
lower as well as to the upper part of the plant. In this way  
the "assimilates" are mainly carried to the nearest consumption  
places. There are 4 tables and 6 references, 6 of which are  
Soviet.

Card 2/3



KOSTETSKIY, N. D.

Agriculture

Cultivation of roses in southern parts of the U.S.S.R.,  
Simferopol', Krymizdat, 1951.

9. Monthly List of Russian Accessions, Library of Congress, December 195<sup>2</sup>~~3~~, Uncl.

KOSTETSKIY, N. D.

Mechanical Wear

"Wear resistance of machine parts."  
Avt.trakt.prom., N o. 2, 1952.

9. Monthly List of Russian Accessions, Library of Congress, June 19<sup>2</sup>~~5~~, Uncl.

*KOSTETSKIY, N.V.*

PAKSHIN, M.F., mayor med. sluzhby; KOSTETSKIY, N.V., mayor med. sluzhby

Specificity of bacterial adsorption of virus in epidemic hepatitis.  
Voen.med.shur. no.3:90 Mr '57. (MIRA 11:3)  
(HEPATITIS, INFECTIOUS)

KOSTETSKIY, N. V.

56. Q Fever in the Crimea

"The Problem of Studying Q Fever in Some Rayons of the Crimea,"  
by Maj Med Serv M. F. Pakshin and Maj Med Serv N. V. Kostetskiy.  
Voyenno-Meditsinskiy Zhurnal No 4, Apr 57, pp 38-42.

Studies of cases of Q fever made in the Crimea during the period 1954-1956 in certain rayons are reported. Patients in the Department of Infectious Diseases of a medical establishment in a Crimean city were examined

and 42 were found to be suffering from Q fever. Diagnosis was made on the basis of the clinical picture and laboratory tests, i.e., complement fixation with R. burneti, and inoculating guinea pigs with blood from the patients. The R. burneti antigen (Italo-Greek strain) was obtained from the Institute of Epidemiology and Microbiology imeni Gamaleya, Academy of Medical Sciences USSR. The patients had been admitted to the hospital for influenza, typhoid, paratyphoid, bronchopneumonia, catarrh of the upper respiratory tract, etc. At the hospital Q fever was suspected in only a few cases. Most of the cases were of average severity. There was one case of relapse, verified clinically and in the laboratory.

Some of the patients had had contact with domestic animals, others had only handled raw milk, cheeses, and other milk products. Certain patients who had had no direct contact with animals or with raw milk products were found to have worked in buildings or had rested in stalls reserved for the cattle. It was clear that infection was more frequent in people who lived close to animals than in those who lived in town. One table shows the serological results from blood tests, and another clarifies the sources of infection and the reservoirs of the Q fever pathogen, i. e., the Crimean gray rat from whose blood the Q fever pathogen was isolated.

The following conclusions were reached on the basis of these studies:

- "1. Epidemiological and serological research has established the connection between Q fever in humans and agricultural animals, cattle, sheep, and goats, cattle being the most important in this respect.
- "2. The gray rat found in the Crimea has been recognized as a new reservoir of the Q fever virus.
- "3. The Q fever pathogen was isolated from the dust in animal shelters. Complement fixation reactions were positive for Q-rickettsiosis, thus pointing to the possibility of infection by inhalation.
- "4. Two strains of R. burneti were isolated from the ticks Hyalomma plumbeum and Rh. bursa showing the importance of these two species in the epidemiology of the Crimea." (U)

Sum 1424

PAKSHIN, M.F.; PESTENKO, V.I.; KOSTETSKIY, N.V.

Epidemiology of Marseilles fever in the Crimea and means for its  
eradication. Zhur.mikrobiol.epid.i immun. 31 no.9:61-64 S '60.

(MIRA 13:11)

(ROCKY MOUNTAIN SPOTTED FEVER)

MELEKHIN, V.I.; KOSTETSKIY, P.S.

Installing an electric motor instead of an electromagnet on a  
TO-10 one-process picker. Obm.tekh.opyt. [MLP] no.16:5-7 '56.  
(MIRA 11:11)

(Cotton machinery--Electric driving)



KOSTETSKIY, P.S.

Chain driving from twist gear to top conoid on fine and intermediate  
roving machines. Obm.tekh.opyt. [MLP] no.16:39-40 '56.  
(Spinning machinery) (MIRA 11:11)

SOV/79-29-8-30/81

5(3)

AUTHORS:

Yur'yev, Yu. K., Belyakova, Z. V., Kostetskaya, R. V.,  
Prokof'yev A. I.

TITLE:

Tetraacyloxy-silanes in Organic Synthesis. XXIII. Acylation  
of Amines, Arylhydrazines and Acid Hydrazides With Tetraacyl-  
oxy-silanes

PERIODICAL:

Zhurnal obshchey khimii, 1959, Vol 29, Nr 8,  
pp 2594 - 2597 (USSR)

ABSTRACT:

Previously (Ref 1) the authors described the acylation of  
diethyl-amine with tetraacyloxy-silanes as a convenient syn-  
thesis of the N-N-diethylamides of the saturated monobasic  
organic acids (yields 60-90%)  
 $(RCOO)_4Si + 4 NHR'R'' \rightarrow 4 RCONR'R'' + Si(OH)_4$ . It suggested  
itself to synthesize also other N,N-dialkyl- and N-alkylamides  
of the acids in the same way, and to use this method for the  
synthesis of the N,N-diethylamides of the aromatic acids,  
especially benzoic acid, o- and p-toluic acids (Refs 2,3).  
The acylation of dibutylamine was carried out with the silicic  
anhydrides of acetic, propionic, butyric and caproic acid,

Card 1/3

Tetraacyloxy-silanes in Organic Synthesis. XXIII. SOV/79-29-8-30/81  
Acylation of Amines, Arylhydrazines and Acid Hydrazides With Tetraacyloxy-silanes

sultant substituted amides and hydrazides of the acids obtained by the above-mentioned acylation, their yields and constants, are presented in the table. There are 1 table and 29 references, 7 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: July 2, 1958

Card 3/3

5.3400,5.3600,5.3700

77862  
SOI/79-30-2-13/78

AUTHORS: Yur'Yev, Yu. K., Belyakova, Z. V., Kostetskiy, P. V.,  
Prokof'yev, A. I.

TITLE: Triacyloxyboranes and Tetraacetoxygermanium in Acylation  
of Benzene and Thiophene

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol 30, Nr 2,  
pp 415-420 (USSR)

ABSTRACT: The authors studied relative acylating ability of mixed  
anhydrides of various organic acids (acetic, propionic, and  
butyric) and inorganic acids,  $B(OH)_3$ ,  $Al(OH)_3$ ,  $Ge(OH)_4$ , and  
 $Si(OH)_4$ . The acylation of benzene was performed with the  
anhydrides formed in situ from the organic acid and the  
halides of the nonmetals (boron bromide, germanium  
tetrachloride, aluminum chloride, and silicon tetra-  
chloride) in benzene solution in presence of anhydrous  
aluminum chloride. If the latter is absent, the mixed  
anhydrides can be isolated. The yields of the synthesized  
ketones are shown in Table 1.

Card 1/3

Triacyloxyboranes and Tetraacetoxygermanium in Acylation of Benzene and Thiophene

77862  
SOV/79-30-2-13/78

Table 1.

(A)	(B)			(C)
	R=CH <sub>3</sub>	R=C <sub>2</sub> H <sub>5</sub>	R=2-C <sub>2</sub> H <sub>5</sub>	
(D)	66	56	63.3	7.3 · 10 <sup>-10</sup>
(E)	47	49.5	55	2.2 · 10 <sup>-10</sup>
(F)	31	—	—	6 · 10 <sup>-12</sup>
(G)	23	—	—	—

Key to Table 1: (A) Acylating agent; (B) Yield of the ketone C<sub>6</sub>H<sub>5</sub>COR (in %); (C) The first dissociation constant of inorganic acid of the mixed anhydride; (D) Boroanhydride of organic acid (boron triacetate); (E) Silicon anhydride of organic acid (silicon tetraacetate); (F) Aluminum triacetate; (G) Germanium triacetate

Card 2 / 3

Triacyloxyboranes and Tetraacetoxygermanium in Acylation of Benzene and Thiophene

"APPROVED FOR RELEASE: 06/14/2000

CIA-RDP86-00513R000825210018-

SOV/79-30-2-13/78

It can be seen that the acylation capacity of the mixed anhydrides decreases with decreasing acidity of the inorganic acid:



Thiophene was acylated by boroanhydrides of acetic and butyric acids and by germanium tetraacetate (yields of acetothienone and propyl-2-thienyl ketone were 68.5%) using stannic chloride as catalyst. There are 2 tables and 20 references, 5 Soviet, 6 German, 1 French, 1 Finnish, 1 U.K., and 6 U.S. The 5 most recent U.K. and U.S. references are: D. Tarbell, J. Price, J. Org. Chem., 22, 245 (1957); H. Anderson, J. Am. Chem. Soc., 74, 2371 (1952); Chem. Abst., 41, 5481 (1947); H. Cook, J. Ilett, B. Saunders, G. Stacey, J. Chem. Soc., 1950, 3125; J. Johnson, J. Am. Chem. Soc., 73, 5888 (1951).  
Moscow State University (Moskovskiy gosudarstvennyy universitet)

ASSOCIATION:

SUBMITTED:  
Card 3/3

February 9, 1959

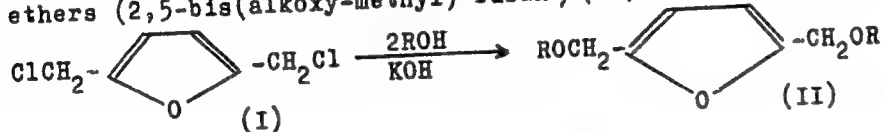
S/079/60/030/007/027/039/XX  
B001/B066

AUTHORS: Novitskiy, K. Yu., Volkov, V. P., Kostetskiy, P. V.,  
and Yur'yev, Yu. K.

TITLE: Investigation in the Furan Series. VII. 2,5-Bis(chloro-  
methyl)-furan in the Synthesis of 2,5-Bis(alkoxy-methyl)-  
and 2,5-Bis(alkyl-mercapto-methyl)-furan

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol. 30, No. 7, pp. 2203-2207

TEXT: Following Ref. 1 the authors synthesized 2,5-bis(alkoxy-methyl)-  
and 2,5-bis(alkyl-mercapto-methyl)-furan by treating 2,5-bis(chloro-methyl)-  
furan with alcohols and mercaptans. The substitution of alkoxy groups for  
two chlorine atoms in compound (I) takes readily place under the action of  
alcohols in the presence of alkali lye; the yield of the corresponding  
ethers (2,5-bis(alkoxy-methyl)-furans) (II) was between 60 and 70%. ✓



Card 1/2

BELIKOV, I.F.; KOSTETSKIY, R.Ya.

Distribution of assimilates in growing sugar beet plants. Fiziol.  
rast. 11 no.4:594-598 J1-Ag '64. (MIRA 17:11)

1. Biologo-pceivennyy institut Sibirskogo otdeleniya AN SSSR,  
Vladivostok.

100 AND 100 OFFICE  
PROCESSES AND PROPERTIES INDEX

KOSTETSKY, V. A. 11

THE SPECTROGRAPHIC ANALYSIS OF BRONZES IN THE ULTRAVIOLET REGION OF THE SPECTRUM . V. A. KOSTETSKY. (IZVEST. AKADEM. NAUK S.S.S.R., 1941, ( Pis.) 6

(2/3, 308-307).—[In Russian.] K. describes a method developed for the determination of Fe, Mn, Sn, Zn, Pb, Ni, and Al in bronzes. The conditions for carrying out the analysis, preparation of the standard samples and electrodes, and the results of investigations of the homogeneity of the electrodes, are given. The light source is obtained from the Fraunhofer spark generator and the electrodes—one of electrolytic copper, the other of bronze—rectangular (2 × 7 mm.). A table of the homologous pairs most suitable for the analysis and a table comparing spectrographic and chemical results are included.—N. B. V.

ASB.SLA METALLURGICAL LITERATURE CLASSIFICATION



[illegible]

KOSTETSKIY, V.V., aspirant

Development of section stations in large cities on main lines  
using electric and diesel traction. Trudy MIIT no.148:4-14  
'62. (MIRA 16:3)

(Railroads--Stations)

MARTINKEVICH, F.S., kand.geograf.nauk; SOBOLEV, Ye.Ya., kand.geograf.nauk;  
 BOL'SHAKOVA, V.P., kand.ekonom.nauk; LAPETA, D.D., kand.ekonom.  
 nauk; GLADKIY, N.I., kand.geograf.nauk, starshiy prepodavatel';  
 ANICHENKO, G.V., kand.geograf.nauk; KOTT, G.Z.; TRUBILKO, N.P.,  
 kand.ekonom.nauk; KOROZENKO, I.K., kand.ekonom.nauk; GUTSEV, Ye.G.,  
 kand.geograf.nauk; CHEREMENKO, V.A.; CHERNYSH, L.P.. Prinimali  
 uchastiye: KOZLOVA, A.I.; KOVALEVSKIY, P.V.; MAZURENKO, R.V.;  
 KUVYISHA, Ye.I.; KRYLOVA, V.S.; SERZHINSKIY, I.I.; KURKINA, Z.A.;  
 KALECHITS, T.A.. ROMANOVSKIY, N.T., red.; KOSTEVICH, K.R., red.;  
 TURTSEVICH, L., red.isd-va; SIDENKO, N., tekhn.red.

[Distribution of the industry of White Russia for the processing  
 of agricultural raw materials] Razmeshchenie promyshlennosti BSSR  
 po pererabotke sel'skokhoziaistvennogo syr'ia. Minsk, 1959. 193 p.  
 (MIRA 13:6)

1. Akademiya nauk BSSR, Minsk. Institut ekonomiki. 2. Zaveduyu-  
 shchiy sektorom razmeshcheniya proizvodstva Instituta ekonomiki  
 Akademii nauk BSSR (for Martinkevich). 3. Institut narodnogo  
 khozyaystva im. V.V.Kuybysheva (for Gladkiy).

(White Russia--Industries, Location of)

KOSTEVICH, V.

Irbit plant picks up speed. Za rul. 19 no.5:2-3 My '61.  
(MIRA 14:7)

1. Glavnyy inzhener Irbitskogo mototsikletnogo zavoda.  
(Irbit—Motorcycle industry)

*KOSTEVICH, Z. K.*

USSR/Cultivated Plants. Introduction and Acclimatization

M-2

Abs Jour : Ref Zhur - Biol., No 1, 1958, No 1446

Author : Z.K. Kostevich

Inst : Chernovitskiy University

Title : Results of Acclimatization of Certain Exotic Arboreal Brush-woods in the Chernovitskiy Botanical Garden.

Orig Pub : Nauk. zap. Chernivetsk. un-ta, 1956, 23, 139-143

Abstract : In the botanical garden of Chernovitskiy University, the exotic arboreal brushwoods (Virginian juniper, chestnut oak, Manchurian walnut, catalpas, cherry laurel, tecoma, osage orange, liquidambar and calycanth), after a 5 to 7 year try-out, appeared to be plants with a fine prospect of acclimatizing themselves and are recommended for introduction into the plantations of the Chernovitskaya Oblast'. The Manchurian walnut and Virginian juniper can also be recommended for forest cultivation..

Card : 1/1

APPROVED FOR RELEASE: 06/14/2000

CIA-RDP86-00513R000825210018-4

Abs Jour: Ref Zhur-Biol., No 17, 1958, 77773.

Author : Kostevich Z. K.

Inst : Main Botanical Garden AS USSR

Title : Cultivation of Tensel in the Chernovitskiy Botanical Garden.

Orig Pub: Byul. Gl. botan. sadn. AN SSSR, 1957, vyp. 28  
116-118.

Abstract: Briefly set forth are the national economic significance, biology and history of the cultivation in the USSR of the tensel crop (*Dipsacus fullonum* Mill.). The agrotechny of the cultivation of tensel in the botanical garden, cultivated here from 1951 is described in detail. For an increase of the quantity of conditioned fuller's

Card : 1/2

KOSTEVICH, Z. K.

COUNTRY : USSR  
 CATEGORY : Cultivated Plants. Medicinal. Essential Oil. M  
 Toxib.  
 ABS. JOUR. : RZhBiol., No. 3, 1959, No. 11150  
 AUTHOR : Kostevich, Z. K.  
 INST. : Chernovitsy Botanical Garden.  
 TITLE : Chinese Citrus (*Schizandra chinensis* Baill.) in Chernov-  
 itsy Botanical Garden.  
 FIG. PUB. : Byul. Gl. botan. sada. AN SSSR, 1958, vyp. 30, 94-96  
 STRACT : Observations on the development of Chinese Citrus from  
 seeds and root suckers conducted at Chernovitsy Botanical  
 Garden are described, and also an experiment on the pro-  
 pagation of the plant from green cuttings. Under the  
 conditions of Chernovitsy, Chinese Citrus assigned to  
 dioecious plants, forms male and female flowers on the  
 same plant in common half-covered umbels. The female  
 flowers are the first ones to open and in 2-3 days - the  
 male flowers also open. -- N. S. Letedeva

CARD: 1/1

-153-

KOSTEVICH, Z.K.

Trees and shrubs of the Chernovtsy Botanical Garden. Bul. Glav. bot.  
sada no. 36:18-29 '60. (MIRA 13:7)

1. Botanicheskiy sad Chernovitskogo gosudarstvennogo universiteta.  
(Chernovtsy--Arboretums)

KOSTEVICH, Z.K.

Duration of the growth of trees and shrubs in the Chernovtsy  
Botanical Garden. Biul. Glav. bot. sada no.41:107-108 '61.

(MIRA 14:11)

1. Botanicheskiy sad Chernovitskogo gosudarstvennogo universiteta.  
(Chernovtsy---Phenology)



KOSTEVICH, Z.K.

Some results of the introduction of exotic trees in Bukovina.

Biul.glav.bot.sada no.43:14-18 '61.

(MIRA 15:2)

1. Botanicheskiy sad Chernovitskogo gosudarstvennogo universiteta.  
(Bukovina--Trees)

KOSTEVICH, Z.K.

Propagation of some exotic conifers by cuttings. Biul.  
Glav. bot. sada no.53:44-47 '64. (MIRA 17:6)

1. Botanicheskiy sad Chernovitskogo gosudarstvennogo uni-  
versiteta.

KOSTEVICH, Z.K.

Kosov Arboretum in Ivano-Frankovsk Province. Biol. Glav. bot.  
sada no.56:10 '64. (MIRA 18:5)

1. Botanicheskiy sad Chernovitskogo gosudarstvennogo universi-  
teta.

KOSTEWICZ, Lech; PAWLOWSKI, Andrzej; KOSTANECKI, Wojciech

Effect of sweating on the excretion of ether-soluble substances.  
Przegl. dermat. 52 no.4:397-401 J1-Ag '65.

1. Z Kliniki Dermatologicznej AM w Warszawie (Kierownik: prof.  
dr. S. Jablonska).

L 44818-66 EWT(m)/EWP(j) RM

ACC NR: AR6017235

SOURCE CODE: UR/0058/65/000/012/D035/D035

AUTHOR: Pozdeyev, N. M.; Kosteyn, K. K.

59

ORG: none

B

TITLE: Microwave spectrum of thiophane

SOURCE: Ref. zh. Fizika, Abs. 12D297

REF SOURCE: Tr. Komis. po spektroskopii. AN SSSR, t. 3, vyp. 1, 1964, 231-239

TOPIC TAGS: microwave spectroscopy, dipole moment, molecular spectrum, thiophane, *HYDRO CARBON, GROUND STATE*

ABSTRACT: The microwave spectrum of thiophane in the 8.2—40-cps range has been investigated. Rotating constant molecules in the ground and two lower oscillating states as well as their dipole moment have been determined. [Translation of abstract] [NT]

SUB CODE: 07/

65  
Card 1/1

Kostia, Tadeusz

Silniki lotnicze (Motors for aircraft) Warszawa, Wydawnictwo Iłci Przyjaciół  
Zolnierza, 1953  
167 p. illus., Diagra.

55m/6  
7h3.15  
.48

KOSTIK, TADEUSZ

4

Kashuk: An Experiment with Articulated Wings. Tadeusz Kostik. (Strydoma Polska, 1934). Aviatsiya, Nov., 1934, p. 60. Descriptive design of a Russian glider with hinged wings acting against an air spring of variable rate; structural and operational data.

1.2  
JGP Jue

KOSTLA, T.

Achievements of Polish glider technics. p. 460. (SKRZYDLATA FOLSKA, Vol. 10, No. 29, July 1954, Warszawa, Poland)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 3, No. 12, Dec. 1954, Uncl.



KOSTIA, T.

Sixtieth Jaskolka glider. p. 467. (SKRZYDLATA POLSKA, Vol. 10, No. 30, July 1954, Warszawa, Poland)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 3, No. 12, Dec. 1954, Uncl.

KOSTIA, T.

"Soviet Record Glider Kaszuk." P. 518. (SKRZYDLATA POLSKA, Vol. 10, No. 33, Aug. 1954, Warszawa, Poland)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, No. 1, Jan. 1955 Uncl.

KOSTIA, T.

"The SZD-14X "Jaskolka M." P. 579. (SKRZYDLATA POLSKA, Vol. 10, No. 37, Sept. 1954, Warszawa, Poland)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, No. 1, Jan. 1955 Uncl.

FCMIA, 1.

"High-class Glider Albatros SZD-11", p. 711, (SYMZYBLAFA ICKPA, Vol. 10,  
No. 45, October 1954, Warsaw, Poland)

SC: Monthly List of East European Accessions (EEAL), 10, Vol. 4, No. 3,  
March 1955, Uncl.

S/264/62/000/010/001/006  
I006/I206

AUTHOR: Kostin, T.

TITLE: The problem of endurance strength of aircraft structures

PERIODICAL: Referativnyy zhurnal. Vozdushnyy transport. Svodnyy tom.  
no. 10, 1962, 7, abstract 10A57. (Ermüdungsfestigk.  
Werkstoffen und Bauelement. Vortr. Warschauer Tagung  
May 12-14, 1960, Warsaw, 1961, 50 [German])

TEXT: The importance of fatigue strength requirements for modern aircraft construction is stressed. If these requirements are not already taken into account in the process of preliminary design of experimental constructions, then their fatigue endurance may turn out in some cases to be quite small, and in particularly unfavorable conditions catastrophic destructions may occur due to the inadequate fatigue strength. In order to secure the necessary fatigue strength in new designs it is necessary: to determine correctly the working aerodynamic and inertial loads; to determine a correct calculation procedure and methods for stress determination; to choose

Card 1/2

S/264/62/000/010/001/006  
1006/1206

The problem of endurance...

correctly the type of construction and the methods of production of basic structural elements; to avoid stress concentrations during periodic loading; to determine correctly the magnitudes of allowable stresses and to evaluate the strength characteristics of the construction materials, especially their sensitivity to notches; to apply rational methods for sheet joining, correct fitting of corresponding elements and surface working, and also protection against corrosion; to take into account the influence of the power plant on the main work of the aircraft structure (mechanical vibrations and acoustical repetitive loads); to utilize experimental methods for fatigue strength checking. These measures are important for airplanes produced serially in connection with control of their condition and with possible modifications of the construction.

[Abstractor's note: Complete translation.]

Card 2/2

REPORT, I.

"New machinery for production of artificial resins for shellacs in the Chromos Plant."  
Izvjestaji.

Kemija U Industriji, Zagreb, Vol 3, No 6, June 1954, p. C10

SO: Eastern European Accessions List, Vol 3, No 10, Oct 1954, Lib. of Congress

KOSTIAL, Krista, VOUEK, V.B.; PURMC, Ljerka

The effect of lead ions on acetylcholine release. Arh.hig.rada  
5.no.3-4: 351-354 1954.

1. Toksikoloski odjel. Instituta za medicinska istrazivanja  
Jugoslavenske akademije, Zagreb.

(ACETYLCHOLINE, metag.

release by ganglia, exper. eff. of lead ions(Ser))

(LEAD, effects

on acetylcholine release by ganglia (Ser))



Kostal, Krista

✓ Effect of sodium, potassium, calcium, magnesium, and lead ions on synaptic transmission: Krista Kostal (Inst. Ind. Hyg., Zagreb). *Arhiv. Hig. Rada 6*, 181-224 (1965) (English summary). The acetylcholine output was measured after perfusing the superior cervical ganglion of cats with Mg 10-25, Ca 0.6-10.5, K 21, and Na in an unspecified concn. of millimoles/l., single or in combinations, also Pb 5-10 mikromoles/l. The results are not given as numerical values but in the form of columnar plots. 10 references.

Werner Jacolaga

**KOSTIAL, Krista.**

**The role of acetylcholine in synaptic transmission. Arh.hig.rada  
6 no.3:241-250 1955.**

**1. Institut za medicinska istrasivanja Jugoslavenske akademije  
snanosti i umjetnosti, Zagreb. Toxicology Department,  
Institute of Industrial Hygiene, Zagreb.**

**(SYNAPSES, physiology,  
acetylcholine (Ser))**

**(ACETYLCHOLINE, physiology,  
in synaptic transmission (Ser))**

KOSTIAL, K.

Adaptation to muscular work after a long period of rest.  
K. Kostial Lj. Bogovic

Zagreb, Yugoslavia. A study was made of the adaptation of the thyroid gland after excessive exercise in control animals, even after a resting period of one month. According to the morphological changes and secretory activity the animals thus adapted to the work of the gland.

*Mel* Effect of manganese on synaptic transmission. K. Kostal and Z. Jurčić (Inst. Ind. Hyg., Zagreb, Yugoslavia). Arhiv Hig. Rada 7, 27(1956). The addn. of Mn to the fluid perfusing the superior cervical ganglion of cats causes a block of ganglionic transmission. Ca ions have an antagonizing action on the effect produced by Mn. A nearly complete block of synaptic transmission occurred at a concn. of 100  $\gamma$  Mn/ml. perfusing soln. T. B. F.

2

KOSTIAL, Krista; BOZOVIC, Lj.; HAUSLER, Vera

Eosinophil reaction to cortisone in adapted rats. Arh.  
hig. rada 7 no.2:85-88 1956.

1. Institut za medicinska istrasivanja Jugoslavenske  
akademije i Zavod za fiziologiju Medicinskog fakulteta,  
Zagreb.

(CORTISONE, eff.

on eosinophils in adapted rats (Ser))

(EOSINOPHIL COUNT, eff. of drugs on  
cortisone in adapted rats (Ser))

KOSTIAL, K.

EXCERPTA MEDICA Sec.2 Vol.9/9 Physiology, etc. Sept 56

4171. KOSTIAL K. and VOUK Y.B. Inst. for med. Res., Yugoslav Acad. of Scis and Arts, Zagreb, Medvescak. \* The influence of temperature on the acetylcholine output from a sympathetic ganglion J. PHYSIOL. (Lond.) 1956, 132/1 (239-241) Graphs 1

In order to find the degree of temperature control necessary in ganglion perfusion experiments, cat's isolated superior cervical ganglion was perfused with Locke's solution, and the ACh output at different temperatures determined. The preganglionic trunk was stimulated at 2/sec. with supramaximal shocks. Within the range from 40 to 20° C. temperature was without appreciable effect. Significant reduction in the ACh output was noticeable in the temperature range between 20 and 10° C.

Authors' summary

SIMONOVIC, I.; KOSTIAL, K.; VORGIC, J.

The effect of heparin on the number of platelets in stored blood. Bul.  
sc Jug 5 no.3:80 J1 '60. (EEAI 10:5)

1. Department of Internal Medicine, Medical Faculty, University of  
Zagreb, and Institute for Medical Research, Yugoslav Academy of  
Sciences and Arts, Zagreb.  
(Blood) (Heparin)

SIMONOVIC, I.; KOSTIAL, K.; MARSIC, A.

The effect of metal ions on the hypotonic resistance of erythrocytes  
in vitro. Bul sc Jug 5 no.3:80-81 JI '60. (EEAI 10:5)

1. Department of Medicine, Medical Faculty, University of Zagreb.  
Institute for Medical Research, Yugoslav Academy of Sciences and  
Arts, Zagreb.

(Blood)	(Calcium)	(Ions)	(Osmosis)	(Magnesium)
(Strontium)	(Barium)	(Lead)	(Mercury)	
(Uranium oxides)	(Salt)			



SIMONOVIC, I.; ADAMEC, A.; KOSTIAL, K.

Blood clotting changes in hypothermia. Acta med. iugosl. 14 no.2:  
194-203 '60.

1. Department of Medicine, Medical Faculty. University of Zagreb  
and the Institute for Medical Research of the Yugoslav Academy of  
Sciences and Arts. Zagreb.

(BLOOD COAGULATION)

(BODY TEMPERATURE)

KOSTIAL, Krista; VOJNER, Kata; VOJK, V.B.; WEBER, O.

The influence of chelating agents on uranium retention in the kidney.  
Arh. hig. rada 13 no.4:289-293 '62.

1. Institut za medicinska istraživanja i medicinu rada, Zagreb.  
(EDATHAMIL) (URANIUM) (KIDNEY)

ineffective as potential therapeutic agent because the U complex formed with it is poorly water-soluble and cannot diffuse. Table, 7 Western and 1 unpublished Yugoslav reference.

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YUGOSLAVIA

Krista KOSTIAL, Tea MALJKOVIC, Blanka SLAT and O. WEBER [Affiliation same as above.]

"Toxicity of Some New Chelating Agents for Radiostrontium Removal."

Zagreb, Arhiv za Higijenu Rada i Toksikologiju, Vol 13, No 4, 1962; pp 295-298.

Abstract [English article]: Acute toxicity studies of 5 chelating agents; rat i.p. LD<sub>50</sub> of EDTA is 396.9 mg./Kg. (1.06 ml/Kg.), of dimethylene DTA 675.5 (1.89), of propylene DTA 356.6 (1.10), of N-hydroxyethylene DTA 337 (1.21) and of diethylene triamine pentaacetic acid 665.6 (1.69.) Further studies to clarify potential safety of second agent are planned and in course. Table; 4 Western and 1 Yugoslav unpublished reference.

SIAT, Blanka; KOSTIAL, Krista

The influence of low temperature on acetylcholine and potassium sensitivity of the superior cervical ganglion. Arh. hig. rada 16 no.1:37-41 '65.

1. Institute for Medical Research, Yugoslav Academy of Science and Arts, Zagreb. Submitted April 24, 1965.

KOSTIAL, VLADIMIR

"Vysoke Tatry; tatransky narodny park. /2. prepracovane vyd./ (The High  
Tatras; Tatra National Park. 2d rev. ed. chiefly illus.)

p.239 (Martin, Osveta, 1957, Czechoslovakia)

Monthly Index of East European Accessions (EEAI) LC, Vol. 7, No. 8, August 1958

KOSTIAL-STAMBUK, Aleksandra, ing.

Polystyrene. Kem ind 9 no.8:P/P-61--P/P-66 Ag '60.

1. KI2, Zabreb; clan Redakcionog odbora, "Prerada poliplasta"

KOSTIAL-STAMBUK, Aleksandra, Ing.

Fair of plastic masses in Zagreb, April 13-22, 1962. Tehnika Jug 17  
no.1:135-136 Ja '62.

(Zagreb—Fairs) (Plastics)

KOSTIAL-ZIVANOVIC, K.

Muscular work and adrenocortical activity. Lj. Božović and K. Kostial-Zivanović (Jugoslav Acad. Sci. Arts, Zagreb, Yugoslavia). *Arch. intern. physiol.* 60, 459-64 (1952) (in English).—Female rats were made to run in a drum 15-60 min. a day, and eosinophil counts were made 2 hrs. after the exercise. The counts were depressed 50% of the prework values the 1st day but became progressively less depressed as the animals became adapted to the muscular work. Significant depression was still seen on the 23rd day. Similarly, adrenal ascorbic acid (I) (detd. on separate animals) was reduced 30% after the 1st day's run, but the decrease was progressively less on succeeding days. By the 40th day there was no difference between pre- and post-exercise I. Adrenal wt. was increased and total I increased even faster, resulting in a true rise in I concn. The secretion of adrenocortical hormones increases at the beginning of adaptation to heavy work, then returns to normal values. C. D. Johnston

VARTANIAN, A.; MANOLOV, A.; PERFANOV, G.; KOLEV, D.; MILIANCHEV; GULUBOV,  
St.; KOSTIANEV, St.

Spring soil tilling, and its influence on the development,  
yield and quality of tobacco. Izv Inst tiutium BAN 1:73-118  
'61.



FILIP, Anton, inz., asistent; KOSTIC, Aleksandar, inz., asistent  
(Beograd, Molerova 64)

Radioactive tracer used in the study of working conditions  
of a diesel engine and their influence on the wear of  
piston rings. Tehnika Jug 18 no. 8: Supplement: Radioizotopi  
zrac 2 no. 8: 1413-1418 Ag '63.

1. Institut za nuklearne nauke "Boris Kidric", Beograd-  
Vinca.

KOSTIC, Aleksandar; SIMIC, Vojislav; MILOJKOVIC, Radmila

Alkali basaltoid rocks of Zegiligovo, north of Kumanovo.  
Glas Prir muz A 14/15: 59-78 '61.

1. Clan Uredivackog odbora, "Glasnik Prirodnjackog muzeja.  
Bulletin du Museum d'histoire naturelle" (for Simic).

KOSTIC, Andelija

see KOSTIC-VUJACIC, A.

FILIP,A.; KOSTIC,A.

Radioactive-tracer method in studying the influence of operational conditions of a diesel engine on the wear of its piston ring; abstract. Glas Hem dr 27 no.9/10:555 '64

1. The Boris Kidric Institute of Nuclear Sciences, Hot-Laboratory Department, Belgrade-Vinca.